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The Ferns of Washington

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(Continued from AMERICAN FERN JOURNAL, Vol. 3, No. 4, page 108,
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DRYOPTERIS (ASPIDIUM). SHIELD FERN.

Leaves membranous, continuous with rootstock; petiole more or less covered with chaffy brown scales; veins free. Sori round; indusium present, flat, cordate to reniform, attached by center. (Greek *dryas* = an oak, *pterus* = a fern; from the forest habitat of some species.)

- A. Leaf-blades with narrow base, 1-pinnate, obovate or oblanceolate; veins simple or once forked; primary leaf-divisions deeply toothed or lobed, but otherwise almost entire. 1. *D. oreopteris*.
- AA. Leaf-blades with broad base, 2-3-pinnate; veins freely forked.
 - B. Leaf-blades 2-pinnate, base slightly narrowed; leaflets deeply and doubly serrate. 2. *D. filix-mas*.
 - BB. Leaf-blades 3-pinnate, widest at base; leaflets serrate. 3. *D. dilatata*.

1. DRYOPTERIS OREOPTERIS (ERHR.) MAX. (Figs. 47, 48.)

Leaves 1- but nearly 2-pinnate; petiole short; blade 12-15 inches long; obovate or oblanceolate, its lower surface smooth and shining; leaflets divided nearly to mid-vein, their lowest division longer than the rest; veins free, seldom forked. Sori very minute, near edge of divisions, on backs of veins.—Alaska to Washington; Europe; Asia.

2. DRYOPTERIS FILIX-MAS (L.) SCHOTT. (Figs. 46, 49, 50.)

Male Fern.

Leaf-blades broadly oblong to lanceolate, 2-pinnate, slightly narrowed toward the base; leaflets oblong, smooth, shining beneath, the larger ones pinnately incised. Indusium convex.—Alaska to Labrador, south to California, Michigan, Nova Scotia; Europe.—The rhizome is a well known worm medicine.

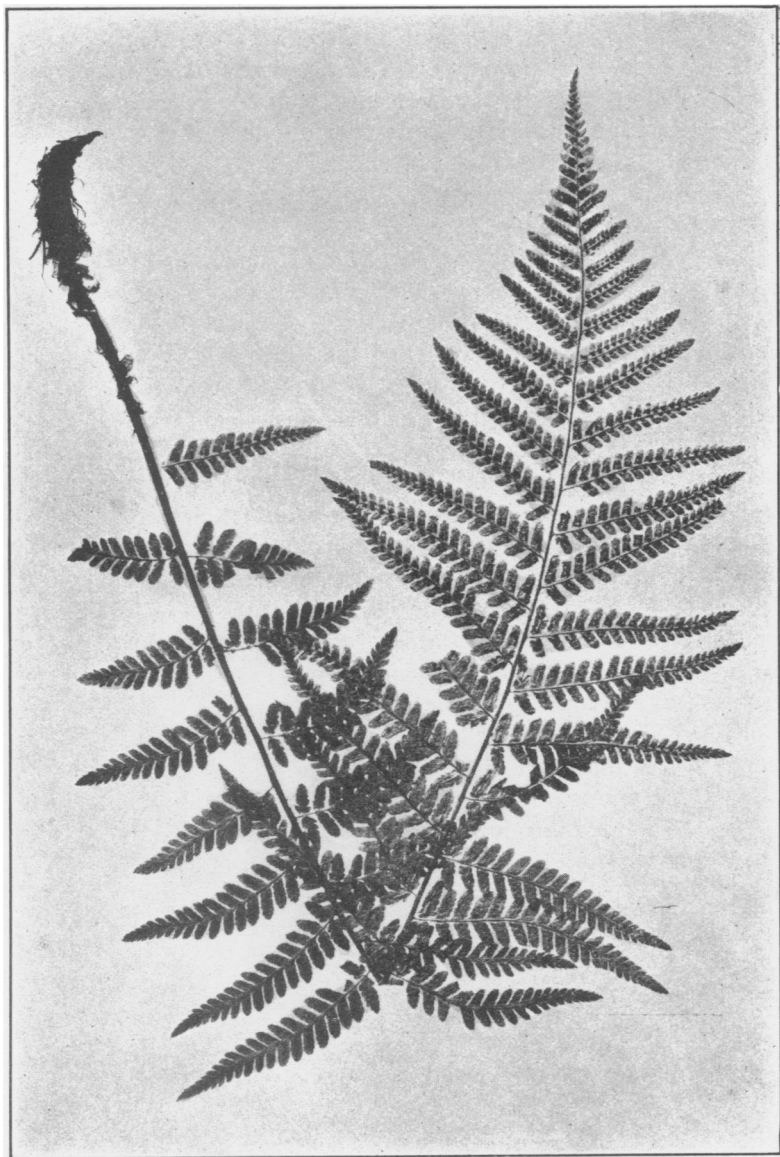


PLATE NO. 9. *Dryopteris filix-mas* $\times \frac{1}{3}$.
(Photograph by courtesy Smithsonian Institution)



PLATE No. 10. *Dryopteris dilatata* $\times \frac{1}{4}$.

3. DRYOPTERIS DILATATA (Hoffm.) Gray. (Figs. 45, 51, 52.)

Mountain · Wood Fern

Leaf-blades broadly ovate, 3-pinnate, widest at base, 8–22 inches long; petioles 7–18 inches long; leaflets oblong, toothed to serrate.—Usually at high altitudes. Alaska to Labrador, south to California, Montana and Virginia; Europe; Asia.

POLYSTICHUM.

Leaves mostly large or medium sized, tufted; leaf-blades linear to lanceolate, 1–2-pinnate; petioles more or less scaly at base; leaflets numerous; veins all free. Sori only on the outer half or less of the leaf, round, borne on the back of the veins; indusium round, flat, peltate. (Greek *poly* = many, *stichos* = a row; because the sori are in several rows in some species)

A. Leaves 1-pinnate, distinctly spinulose-dentate.

B. Petiole very short; leaflets triangular to broadly lanceolate.

1. *P. lonchitis*.

BB. Petiole of medium length; leaflets linear to lanceolate.

C. Leaves 2–5 feet long; leaflets at right angles to leaf-axis, not overlapping.

2. *P. munitum*.

CC. Leaves 1–2 feet long; leaflets oblique to leaf-axis, overlapping.

3. *P. munitum imbricans*.

AA. Leaves 2-pinnate, not spinulose-dentate.

D. Sori few.

4. *P. Lemmonii*.

DD. Sori many.

5. *P. scopulinum*.

1. POLYSTICHUM LONCHITIS (L.) Roth. (Figs. 54, 60, 61.)

Holly Fern.

Leaves scaly along petiole and leaf-axis and mid-vein of leaflets; leaf-blade 1-pinnate, linear, 12–20 inches long, scarcely petioled, hairy beneath; leaflets $\frac{1}{4}$ – $\frac{3}{4}$ inch long, triangular or broadly lanceolate, auricled on upper side, margin densely spinulose-toothed. Sori very close together, one row on each side of the mid-vein.—Subarctic regions southward to California, Colorado and New Mexico; Europe; Asia.

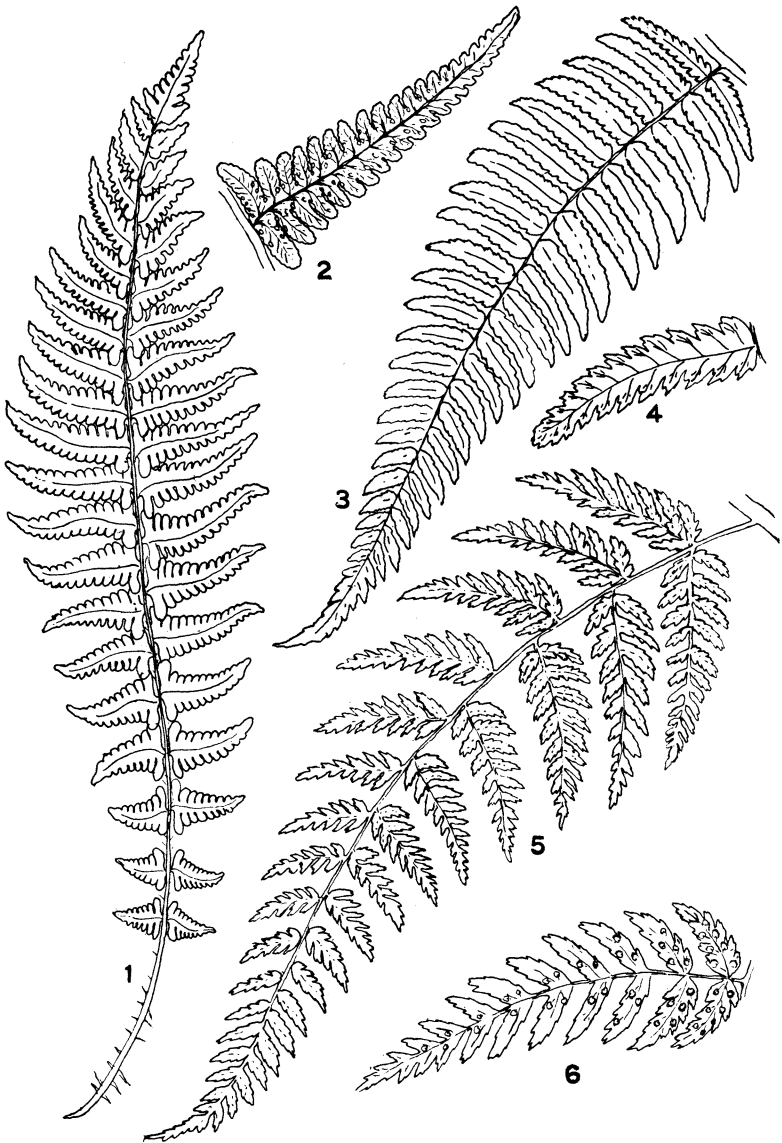


PLATE No. 11.

1, 2 *Dryopteris oreopteris*; 1 = a leaf, $\times \frac{1}{4}$; 2 = a primary leaf-division, $\times \frac{1}{2}$. 3, 4 = *Dryopteris filix-mas*; 3 = a primary leaf-division, $\times \frac{1}{2}$; 4 = a leaflet, $\times 1$. 5, 6 = *Dryopteris dilatata*; 5 = a primary leaf-division, $\times \frac{1}{2}$; 6 = a secondary leaf-division, $\times 1$.

2. *POLYSTICHUM MUNITUM* (Kaulf.) Presl. (Figs. 53, 56, 67.)

Sword Fern.

Leaves 2-5 feet long, with petiole and leaf-axis and mid-vein of leaflets scaly; petiole of medium length; leaf-blade lanceolate, 1-pinnate; leaflets horizontal, linear, strongly auricled on the upper side, spinulose-serrate. Sori close together, one row between the margin and mid-vein, nearer margin.—Alaska to Idaho and California.—Much used for decorating because it is large, tough and evergreen.

3. *POLYSTICHUM MUNITUM IMBRICANS* (Eat.) Max. (Figs. 58, 59.)

Leaf-blades lanceolate, 1-2 feet long; leaflets oblique to the mid-vein, overlapping, broadly lanceolate.—On dry rocky slopes of mountains. Washington to California.

4. *POLYSTICHUM LEMMONI* Underw. (Fig. 62.)

Leaves 2-pinnate or partly so, 6-12 inches long, densely tufted, very scaly at base, slightly so above; petioles of medium length; primary divisions ovate, rounded at ends, consisting of 6-10 oval obtuse crenate divisions or leaflets besides the terminal one. Sori small, few, 1-2 to each leaflet or division.—In high altitudes. Alaska to California.

5. *POLYSTICHUM SCOPULINUM* (Eat.) Max. (Fig. 63.)

Leaves 1-2 feet long; petiole nearly as long as the blade; blade lanceolate, 2-pinnate below; scales on rachis small and few, at base of petiole large and many; primary leaf-divisions divided at base, serrate with incurved teeth, blunt or rounded at tip. Sori 1-6 on each leaflet or lobe of primary leaf-division; indusium large, more or less lobed.—Washington and Idaho to California.

[To be Continued.]



PLATE NO. 12.

1 = *Polystichum munitum* $\times \frac{1}{8}$; 2 = *P. Lonchitis* $\times \frac{1}{8}$; 3 = *Phegopteris alpestris* $\times \frac{1}{8}$.

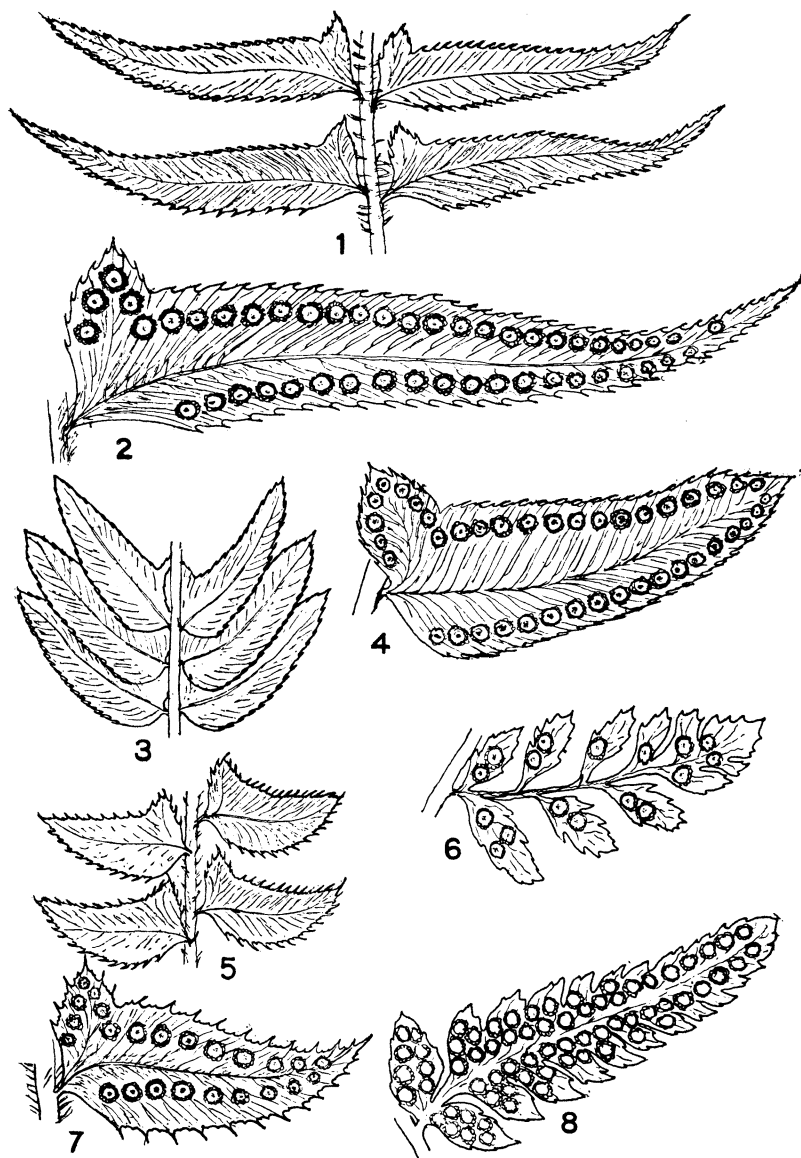


PLATE No. 13.

1, 2 = *Polystichum munitum*; 1 = a portion of a leaf-blade, $\times \frac{1}{2}$; 2 = a leaflet, $\times 1$. 3, 4 = *Polystichum munitum imbricans*; 3 = portion of a leaf-blade, $\times \frac{1}{2}$; 4 = a leaflet, $\times 1$. 5, 7 = *Polystichum lonchitis*; 5 = a portion of a leaf-blade, $\times \frac{1}{2}$; 7 = a leaflet, $\times 1$. 6 = *Polystichum Lemmoni*, a primary leaf-division, $\times 1$. 8 = *Polystichum scopulinum*, a primary leaf-division, $\times 1$.



PLATE No. 14. *Polystichum Lemmoni* $\times \frac{1}{2}$.
(Photograph by courtesy Smithsonian Institution)